

## **CURRICULUM VITAE**

**BARBARA SARGENT, PhD, PT**

**March 20, 2024**

### **I. BIOGRAPHICAL INFORMATION**

#### **PERSONAL INFORMATION**

Office: Development of Infant Motor Performance Laboratory, Director  
Division of Biokinesiology and Physical Therapy  
Ostrow School of Dentistry  
University of Southern California  
1540 East Alcazar St., CHP 155  
Los Angeles, CA 90089  
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Faculty website: <https://pt.usc.edu/faculty/barbara-sargent-phd-pt-pcs/>  
Lab website: <https://sites.usc.edu/dimpl/>

#### **UNIVERSITY EDUCATION**

2017 University of Southern California, Los Angeles  
Certificate in Clinical, Biomedical, and Translational Investigations

2013 Ph.D., Biokinesiology  
University of Southern California, Los Angeles

1994 M.S., Education: Concentration in Special Education  
California State University, Fullerton

1989 B.S., Physical Therapy  
Mount St. Mary's College, Los Angeles

#### **POST GRADUATE TRAINING**

2016-2021 Rehabilitation Research Career Development Program, Faculty Scholar,  
NIH / K12 HD055929

2015-2016 University of Southern California, Mentored Career Development in Clinical  
and Translational Science Program

## **BOARD CERTIFICATION AND/OR LICENSURE**

- 2021           Hammersmith Infant Neurological Examination,  
Certification, Nationwide Children's Hospital
- 2017           Prechtl's Method on the Qualitative Assessment of General Movements:  
Basic Certification, General Movements Trust
- 2014           Certified Exercise Expert for Aging Adults,  
Academy of Geriatric Physical Therapy, APTA
- 2002-2032     Board Certified Clinical Specialist in Pediatric Physical Therapy,  
American Board of Physical Therapy Specialties
- 1989-2025     Licensed Physical Therapist, Physical Therapy Board of California,  
License# PT 16261

## **ACADEMIC APPOINTMENTS**

- 2013-present   University of Southern California, Los Angeles, CA  
Division of Biokinesiology and Physical Therapy  
2021-present   Associate Professor of Clinical Physical Therapy  
2013-2021      Assistant Professor of Clinical Physical Therapy
- 2009           Temporary Adjunct Faculty  
Chapman University, Orange, CA  
Department of Physical Therapy
- 2008-2013     Teaching Assistant  
University of Southern California, Los Angeles, CA  
Division of Biokinesiology and Physical Therapy
- 2000-2013     Mount St. Mary's College, Los Angeles, CA  
Department of Physical Therapy  
2012-2013      Assistant Professor  
2000-2012      Adjunct Faculty

## **CLINICAL APPOINTMENTS**

- 2001-2012     Physical Therapist  
Children's Hospital of Orange County (CHOC), Orange, CA  
Department of Rehabilitation: NICU, inpatient, outpatient, high-risk infant clinic
- 1995-2001     Physical Therapist  
St. Joseph's Hospital, Orange, CA. (contracted to CHOC)  
Department of Rehabilitation: pediatric outpatient
- 1993-1996     Physical Therapist  
Tustin Rehabilitation Center, Tustin, CA  
Department of Rehabilitation: pediatric and adult acute rehabilitation

- 1990-1993     Physical Therapist  
Pediatric Physical Therapy, Fountain Valley, CA  
Outpatient private practice: pediatric outpatient
- 1989-1990     Physical Therapist  
La Palma Intercommunity Hospital, La Palma, CA  
Department of Rehabilitation: adult acute rehabilitation

## **HONORS, AWARDS**

- 2023            JMLD Research Excellence Award, best article published in the *Journal of Motor Learning and Development* in 2022
- 2023            Outstanding Research Abstract Award, best pediatric poster abstract at the 2023 APTA Combined Sections Meeting
- 2023            Toby Long Award, best paper published in *Pediatric Physical Therapy* in 2022
- 2019            Toby Long Award, best paper published in *Pediatric Physical Therapy* in 2018
- 2016            Commendation for Excellence in Teaching,  
Division of Biokinesiology and Physical Therapy, USC
- 2014            Dissertation Award,  
Section on Pediatrics, American Physical Therapy Association
- 2013            Adopt-A-Doc Scholarship,  
Education Section, American Physical Therapy Association
- 2011-2012     Promotion of Doctoral Studies (PODS) Scholarship-Level II, Foundation for Physical Therapy
- 2011            Viva J. Erikson Award, Foundation for Physical Therapy
- 2010-2011     Promotion of Doctoral Studies (PODS) Scholarship-Level I, Foundation for Physical Therapy

## **MEMBERSHIP IN SCIENTIFIC AND PROFESSIONAL ORGANIZATIONS**

- 1987-present   Member, American Physical Therapy Association (APTA)  
Member, APTA Academy of Pediatric Physical Therapy  
Member, APTA Academy of Neurologic Physical Therapy  
Member, APTA Academy of Education  
Member, APTA Academy of Physical Therapy Research  
Member, APTA California Physical Therapy Association
- 2017            Member, American Society of Neurorehabilitation (ASNR)
- 2016-present   Member, American Academy of Cerebral Palsy and Developmental Medicine
- 2012-2017     Member, Society for Neuroscience (SfN)

## II. ADMINISTRATIVE AND SERVICE ACTIVITIES

### ADMINISTRATIVE ACTIVITIES

- 2018-present      Discipline Director for Physical Therapy,  
California Interdisciplinary Leadership Education in Neurodevelopmental and  
Related Disabilities (CA-LEND) Training Program.  
Children's Hospital of Los Angeles, Los Angeles, CA
- 2018-present      Co-Director, USC/CHLA Pediatric Physical Therapy Residency  
University of Southern California, Los Angeles, CA  
Division of Biokinesiology and Physical Therapy

### UNIVERSITY SERVICE

#### University of Southern California

- 2020                  Member, Committee to Return to USC Community-based Research
- 2018-present      Mentor, Bridge UnderGrad Science (BUGS) Summer Research Program
- 2015-present      Reviewer, Zumberge Fund Individual Grant Program
- 2014-present      Reviewer, Southern California Clinical and Translational Science Institute  
Grant Program

#### Division of Biokinesiology and Physical Therapy, University of Southern California

- 2021-present      Member, Research, Teaching, Practitioner and Clinical Track (RTPC)  
Appointments and Promotions Committee
- 2021-present      Faculty Co-Leader, USC DPT/BKN Monthly Pediatric Discussion Group
- 2018-present      Member, Post Professional Physical Therapy Education Committee
- 2016-2018          Member, Faculty Affairs Committee
- 2015-2016          Judge, School of Dentistry Research Day
- 2013-present      Member, Biokinesiology Program Faculty Committee
- 2013-present      Faculty Mentor, Doctor of Physical Therapy Mentoring program  
(6 students/year)
- 2013-present      Member, Curriculum Committee, representing life span and interprofessional  
education threads

### EDITORIAL ACTIVITIES

#### Editorial Review Board

- 2023-2025          Editorial Board Member, Pediatric Physical Therapy
- 2017-present      Editorial Board Member, Physical and Occupational Therapy in Pediatrics

#### Scientific Review for Journals [number of reviews]

- |      |  |     |
|------|--|-----|
| 2022 | Pediatrics   | [1] |
| 2022 | Journal of Clinical Medicine                               | [1] |
| 2022 | Cochrane Developmental, Psychosocial and Learning Problems | [1] |
| 2022 | Annals of Medicine   | [2] |
| 2020 | Physiotherapy Research International                       | [1] |

2019	PLOS ONE	[1]
2017	BMJ Paediatrics Open	[1]
2017	Infant Behavior and Development	[1]
2016-2017	Neurorehabilitation & Neural Repair	[3]
2016	BMJ Open	[1]
2015-present	Physical and Occupational Therapy in Pediatrics	[17]
2015-2020	Research in Developmental Disabilities	[2]
2014-present	Physical Therapy	[5]
2014-2015	Journal of Hand Therapy	[3]
2012-present	Pediatric Physical Therapy	[32]

### External Grant Review

2021	Reviewer, Clinical and Translational Science Awards (CTSA) External Reviewer Exchange Consortium
2020	Reviewer, French Research National Agency, Paris, France
2016-present	Reviewer, Academy of Pediatric Physical Therapy, Alexandria, VA
2016	Reviewer, Development and Learning Sciences Program, National Science Foundation, Arlington, VA
2014	Reviewer, Swiss National Science Foundation, Division Biology and Medicine, Berne, Switzerland

### SERVICE TO PROFESSIONAL ORGANIZATIONS

American Physical Therapy Association (National)

Section on Pediatrics / APTA Academy of Pediatric Physical Therapy

2018-2020	Grants Vice Chair, Research Committee, Academy of Pediatric Physical Therapy
2018-2019	Member, Planning Committee for the Academy of Pediatric Physical Therapy Research Summit V
2018-present	Member, Pediatric Residency and Neonatology Fellowship Directors Special Interest Group, American Physical Therapy Association
2016-present	Abstract reviewer, Academy of Pediatric Physical Therapy Annual Conference
2016-present	Abstract reviewer, American Physical Therapy Association Combined Sections Meeting
2016-present	Member, Research Committee, Academy of Pediatric Physical Therapy
2015	Abstract reviewer, IV Step Conference
2010-2013	Member, Evidence Based Clinical Practice Guideline Development Committee: Congenital Muscular Torticollis
2006-2007	Item Writer, Board Certified Pediatric Clinical Specialist Examination, Member of the Specialization Academy of Content Experts

World Conference for Physical Therapy

2014-present	Abstract reviewer, World Conference for Physical Therapy
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## COMMUNITY SERVICE

2017-19, 2022-23 Panelist, Southern California Pre-Physical Therapy Conference, USC  
2013-2016 Special Olympics, Fun Fitness Screenings

## III. SCHOLARLY ACTIVITY

\* indicate USC students/ residents under Dr. Sargent's mentorship; Senior Author is underlined

## PUBLICATIONS

### PUBLICATIONS (peer-reviewed)

1. **Sargent B**, Coulter C, Cannoy J, Kaplan SL. Physical Therapy Management of Congenital Muscular Torticollis: A 2024 Evidence-Based Clinical Practice Guideline from the APTA Academy of Pediatric Physical Therapy. *Pediatr Phys Ther.* 2024; 36(3). – in press
2. Sukal-Moulton T, Barbosa VM, **Sargent B**, deRegnier R, Bos AF, Peyton C. Baby Observational Selective Control Appraisal (BabyOSCAR): convergent and discriminant validity and reliability in infants with and without spastic cerebral palsy. *Dev Med Child Neurol.* – in press
3. Kretch K, Dusing S... **Sargent B**, .... Early mobility and crawling: beliefs and practices of pediatric physical therapists in the United States. *Pediatr Phys Ther.* 2024;36(1):9-17.
4. Januszyk D\*, Schafer E\*, Thompson H, **Sargent B**. Effect of exercise and motor interventions on physical activity and motor outcomes for adults with cerebral palsy: a systematic review. *Dev Neurorehabil.* 2023;26(6-7):389-412.
5. Fiss AL, Hakstad RB, Looper J, Pereira SA, **Sargent B**, Silveira J, Willett S, Dusing SC. Embedding play to enrich physical therapy. *Behav Sci.* 2023;13(6):440.  
<https://doi.org/10.3390/bs13060440>
6. Deng W, **Sargent B**, Havens K, Vanderbilt D, Rosales M, Pulido JC, Mataric M, Smith, BA. Correlation between performance and quantity/variability of leg exploration in a contingency learning task during infancy. *Infant Behav Dev.* 2023;70:101788.
7. Castilla A\*, Gonzalez M\*, Kush L, **Sargent B**. Informing the physical therapy management of congenital muscular torticollis clinical practice guideline: a systematic review. *Pediatr Phys Ther.* 2023;35(2):190-200.
  - *Pediatric Physical Therapy* Expert Interview on: Congenital Muscular Torticollis: Systematic Review to Inform Best Practice <https://youtu.be/zMp4XksxYQU>
8. Butera CD,...Wisnowski J,...**Sargent B**, Lepore N, ...Dusing S. Effect of a NICU to home physical therapy intervention on white matter trajectories, motor skills, and problem solving skills of infants born very preterm: a case series. *J Pers Med.* 2022;12(12):2024.  
<https://doi.org/10.3390/jpm12122024>

9. Kim JA\*, Park S, Fetters L, Eckel SP, Kubo M, **Sargent B**. Infants born preterm demonstrate reduced task-specific exploration during the scaffolded mobile task. *J Mot Learn Dev*. 2022; 10(3):429-448.
10. Kretch K, ... **Sargent B**, ...Dusing S. “Learn the Signs. Act Early.” Updates and implications for physical therapists. *Pediatr Phys Ther*. 2022; 34(4):440-448.
  - Toby Long Award, best paper published in *Pediatric Physical Therapy* in 2022
11. Dusing S, Harbourne R, ....**Sargent B**... Vanderbilt DL. The SIT-PT trial protocol: a dose-matched randomized clinical trial comparing 2 physical therapist interventions for infants and toddlers with cerebral palsy. *Phys Ther*. 2022; 102(7):pzac039.
12. Baker A\*, Niles N\*, Kysh L, **Sargent B**. Effect of motor intervention for infants and toddlers with cerebral palsy: a systematic review and meta-analysis. *Pediatr Phys Ther*. 2022;34(3): 297-307.
13. **Sargent B**, Harbourne R, Moreau NG, et al. Research Summit V: Optimizing transitions from infancy to young adulthood in children with neuromotor conditions. *Pediatr Phys Ther*. 2022;34(3):411-417.
14. Kim JA\*, Park S, Fetters L, Eckel SP, Kubo M, **Sargent B**. Quantifying infant exploratory learning. *J Mot Learn Dev*. 2022;10(1):167-183.
  - JMLD Research Excellence Award, best article published in *J Mot Learn Dev* in 2022
15. **Sargent B**, Havens KL, Kubo M, Wisnowski JL, Wu T, Fetters L. Motivating selective motor control of infants at high risk of cerebral palsy using an in-home kicking-activated mobile task: a pilot study. *Phys Ther*. 2022; 102(2), pzab265.
16. Kim JA\*, Fetters L, Kubo M, Havens K, Eckel SP, **Sargent B**. Infants born preterm and infants born full-term generate more selective leg joint movement during the scaffolded mobile task. *Infancy*. 2021; 26(5):756-769.
17. Kim JA\*, Fetters L, Kubo M, Eckel SP, **Sargent B**. Infants born full-term and preterm increase the height of anti-gravity leg movements during a kick-activated mobile task using a scaffolded task environment. *Infancy*. 2021; 26(1):168-183.
18. **Sargent B**, Havens KL, Wisnowski JL, Wu T, Kubo M, Fetters L. In-home kicking-activated mobile task to motivate selective motor control of infants at high risk of cerebral palsy: a feasibility study. *Phys Ther*. 2020; 100(12):2217-2226.
19. Coombs A\*, Schilperoort H, **Sargent B**. The effect of exercise and motor interventions on physical activity and motor outcomes during and after medical intervention for children and adolescents with acute lymphoblastic leukemia: a systematic review. *Crit Rev Oncol Hematol*. 2020;152:103004.
20. Ruggeri A\*, Dancel A\*, Johnson R, **Sargent B**. The effect of motor and physical activity intervention on motor outcomes of children with autism spectrum disorder: a systematic review. *Autism*. 2020; 24(3):544-568.

21. **Sargent B**, Kaplan SL, Coulter C, Baker C. Congenital muscular torticollis: bridging the gap between research and clinical practice. *Pediatrics*. 2019;144(2):e20190582.
22. Fitter N, Funke R, Pascual JC, Eisenman LE, Dang W, Rosales MR, Bradley NS, **Sargent B**, Smith BA, Mataric MJ. Socially assistive infant-robot interaction: using robots to encourage infant leg motion training. *IEEE Robot Autom Mag. Special issue on socially assistive robotics. Cover photo*. 2019; 26(2):12-23.
23. Kaplan SL, Coulter C, **Sargent B**. Physical Therapy Management of Congenital Muscular Torticollis: A 2018 Evidence-Based Clinical Practice Guideline from the APTA Academy of Pediatric Physical Therapy. *Pediatr Phys Ther*. 2018; 30(4):240-290.
  - Toby Long Award, best paper published in *Pediatric Physical Therapy* in 2018
  - ECRI Guidelines Trust: <https://guidelines.ecri.org/brief/882>
24. Heidenreich E\*, Johnson R, **Sargent B**. Informing the update to the Physical Therapy Management of Congenital Muscular Torticollis Evidence-Based Clinical Practice Guideline: a systematic review. *Pediatr Phys Ther*. 2018; 30(3):164-175.
25. **Sargent B**, Kubo M, Fetters L. Infant discovery learning and lower extremity coordination: influence of prematurity. *Phys Occup Ther Pediatr*. 2018; 38(2):210-225.
26. Duff S, **Sargent B**, Kutch J, Berggren J, Leiby B, Fetters L. Using contingent reinforcement to augment muscle activation after perinatal brachial plexus injury: a pilot study. *Phys Occup Ther Pediatr*. 2017; 37(5), 555-565.
27. **Sargent B**, Reimann H, Kubo M, Fetters L. Infant intralimb coordination and torque production: influence of prematurity. *Infant Behav Dev*. 2017; 49:129-140.
28. Peterson S\*, Su J, Szmuszkowicz J, Johnson R, **Sargent B**. Exercise capacity following pediatric heart transplantation: a systematic review. *Pediatr Transplant*. 2017; 21(5). doi:10.1111/petr.12922
29. Mendonca B\*, **Sargent B**, Fetters L. The cross-cultural validity of standardized motor development screening and assessment tools: a systematic review. *Dev Med Child Neurol*. 2016;58(12): 1213-1222.
30. **Sargent B**, Scholz J, Reimann H, Kubo M, Fetters L. Development of infant leg coordination: exploiting passive torques. *Infant Behav Dev*. 2015; 40:108-121.
31. **Sargent B**, Reimann H, Kubo M, Fetters L. Quantifying learning in young infants: tracking leg actions during a discovery-learning task. *J Vis Exp*. 2015; 100, e52841.
32. **Sargent B**, Schweighofer N, Kubo M, Fetters L. Infant exploratory learning: influence on leg joint coordination. *PLOS ONE*. 2014; 9(3):e91500.
33. Lee A, Parmanto B, Saptono A, Pulantara W, **Sargent B**, Figueroa J. The VISYTER telerehabilitation system for globalizing physical therapy consultation: issues and challenges for telehealth implementation. *J Phys Ther Educ*. 2012; 26:90-96.



## PUBLICATIONS (peer-reviewed conference papers)

1. Deng W, **Sargent B**, Bradley N, Klein L, Rosales M, Pulido JC, Mataric M, Smith, BA. Using socially assistive robot feedback to reinforce infant leg movement acceleration. *2021 30<sup>th</sup> IEEE International Conference on Robot & Human Interactive Communication (RO-MAN)*. Virtual. 2021; 749-756.
2. Funke R, Fitter NT, de Armendi JT, Bradley NS, **Sargent B**, Mataric MJ, Smith BA. A data collection of infants' visual, physical, and behavioral reactions to a small humanoid robot. *2018 IEEE Workshop on Advanced Robotics and its Social Impacts (ARSO)*. Genoa, Italy. 2018; 99-104.

## PUBLICATIONS (others)

1. **Sargent B**, Chang T, Staudt L. Commentary on "The Head Control Scale: Responsiveness and concurrent validity with the Alberta Infant Motor Scale." *Pediatr Phys Ther*. 2023; 35(4):485.
2. **Sargent B**, Staudt L, Garg L. Commentary on "Parent-reported PEDI-CAT mobility and gross motor function in infants with cerebral palsy." *Pediatr Phys Ther*. 2021; 33(3):162.
3. Peterson S\*, Bennett A, **Sargent B**. Commentary on "Changes in motor development during a four-year follow-up on children with univentricular heart defects." *Pediatr Phys Ther*. 2016; 28(4):452.
4. Kim JA\*, **Sargent B**. Commentary on "Ankle movements during supine kicking in infants born preterm." *Pediatr Phys Ther*. 2016;27:303.
5. **Sargent B**, Huang C. Commentary on "Behavior during tethered kicking in infants with periventricular brain injury." *Pediatr Phys Ther*. 2015; 27(4):413.
6. Flagg J, Flagg P, Beeler L, **Sargent B**. Commentary on "Short-term intensive Neurodevelopmental treatment (NDT) program experiences of parents and their children with disabilities." *Pediatr Phys Ther*. 2015; 27(1):71.
7. **Sargent B**, Miller M. Commentary on "The effect of torsional shoe flexibility on gait and stability in children learning to walk." *Pediatr Phys Ther*. 2014; 26(4):417.
8. **Sargent B**. Book review on "Gross Motor Function Measure (GMFM-66 & GMFM-88) User's Manual, 2<sup>nd</sup> edition." *Pediatr Phys Ther*. 2014; 26(3):366-367.
9. **Sargent B**, Fethers L. Commentary on "Measuring advanced motor skills in children with cerebral palsy: Further development of the Challenge Module." *Pediatr Phys Ther*. 2014; 26(2):213.
10. **Sargent B**, Pate J\*. Commentary on: "Reliability and diagnostic accuracy of clinical test of vestibular function for children." *Pediatr Phys Ther*. 2014;26(2):189-190.
11. **Sargent B**, Augustine L. Commentary on "Motor development of infants with univentricular heart. A prospective controlled follow-up study." *Pediatr Phys Ther*. 2013;25(4):451.

12. **Sargent B**, Fetters L. Commentary on “Prediction of motor and functional outcomes in infants born preterm assessed at term.” *Pediatr Phys Ther.* 2009;21(1):11.

## BOOK CHAPTERS

1. **Sargent B**, Lee Y (2023). Child with torticollis. In D. Kamat, L. Sivaswamy (Eds.), *Symptom Based Approach to Pediatric Neurology*, New York, NY: Springer Nature.
2. **Sargent B**, Coulter C, Kaplan SL (2022). Congenital muscular torticollis and cranial deformation. In R. Palisano, M. Orlin, & J. Schreiber (Eds.), *Campbell's Physical Therapy for Children*, 6th ed. St. Louis, MO: Elsevier Health Sciences.
3. **Sargent B** (2021). Psychometric properties of standardized tests. In Hadders-Algra M (Ed), *Early detection and early intervention in developmental motor disorders – from neuroscience to participation*. London, UK: Mac Keith Press.
4. Smelset N\*, Coulter C, **Sargent B** (2021). Case study: Congenital muscular torticollis. In Effgen S, Fiss A (Eds), *Meeting the Physical Therapy Needs of Children*, 3<sup>rd</sup> ed. Philadelphia, PA: F.A.Davis Company.
5. Kaplan SL, **Sargent B**, Coulter C (2017). Congenital muscular torticollis and cranial deformation. In R. Palisano, M. Orlin, & J. Schreiber (Eds.), *Campbell's Physical Therapy for Children*, 5th ed. St. Louis, MO: Elsevier Health Sciences.

## RESEARCH PRESENTATIONS AT SCIENTIFIC MEETINGS

### PRESENTATIONS (peer-reviewed international symposium)

1. Kolobe T, Heathcock J, Smith B, **Sargent B**. Optimizing movement exploration and mobility in infants at risk for developmental delays or cerebral palsy: timing, content, and dosing. Mini-Symposium. International Conference on Cerebral Palsy and other Childhood-onset Disabilities. June 3, 2016. Stockholm, Sweden.

### PRESENTATIONS (peer-reviewed national symposium)

1. **Sargent B**, Shah D. Implementing the congenital muscular torticollis clinical practice guideline and best practices in positional plagiocephaly. 2023 Early Cerebral Palsy Health Summit: Detection, Intervention, Implementation. June 17, 2023. Atlanta, GA.
2. **Sargent B**, Staudt E, Fowler E. Selective motor control interventions: lower extremity strategies for 0-3. 2023 Early Cerebral Palsy Health Summit: Detection, Intervention, Implementation. June 18, 2023. Atlanta, GA.
3. **Sargent B**. Early identification and intervention of infants with spastic cerebral palsy. Margaret Jones Conference on Cerebral Palsy, Center for Cerebral Palsy at University of California Los Angeles / Orthopaedic Institute for Children. March 25, 2023. Los Angeles, CA.

4. **Sargent B**, Staudt E, Fowler E. Lower extremity selective motor control of children with cerebral palsy: innovations in assessment and intervention. American Physical Therapy Association Combined Sections Meeting. February 23, 2023. San Diego, CA.
5. Kretch K, **Sargent B**. “Learn the Signs. Act Early.” Program: Evidence for developmental surveillance milestones and crawling versus early mobility. American Physical Therapy Association Combined Sections Meeting. February 23, 2023. San Diego, CA.
6. **Sargent B**, Dusing S. Implementing the clinical practice guidelines for infants and toddlers with or at high risk of cerebral palsy: identification, assessment, intervention, referrals. California Physical Therapy Association Annual Conference. September 25, 2022. Anaheim, CA.
7. **Sargent B**, Staudt E, Fowler E. Selective motor control of the lower extremities in infants and children with spastic cerebral palsy: innovations in assessment and intervention. Mini-symposium. American Academy of Cerebral Palsy and Developmental Medicine 76th Annual Meeting. September 22, 2022. Las Vegas, NV.
8. Paleg G, **Sargent B**. Gross motor and lower extremity task specific motor training. 2022 Early Cerebral Palsy Health Summit: Detection, Intervention, Implementation. August 13, 2022. Atlanta, GA.
9. Staudt E, **Sargent B**, Fowler E. Lower extremity selective motor control. 2022 Early Cerebral Palsy Health Summit: Detection, Intervention, Implementation. August 13, 2022. Atlanta, GA.
10. **Sargent B**, Brodehl G, Zollars JA. Congenital muscular torticollis and cranial deformation symposium. American Physical Therapy Association New Mexico Virtual Fall Conference. September 18, 2021. Virtual.
11. **Sargent B**, Peyton C, Fowler E, Sukal-Moulton T. Selective motor control in practice. E-Health Summit: Implementation of Early Detection and Intervention of Cerebral Palsy. August 13, 2021. Virtual.
12. Dusing S, Stevenson R, Brown S, **Sargent B**. Goals, methods, and challenges infant intervention trials: a brainstorming session. American Academy of Cerebral Palsy and Developmental Medicine 74<sup>th</sup> Annual Meeting. September 26, 2020. Virtual.
13. Peyton C, Sukal-Moulton T, Fowler E, **Sargent B**. Selective motor control in practice - can it be done in the under 2?. E-Health Summit: Implementation of Early Detection and Intervention of Cerebral Palsy. August 8, 2020. Virtual.
14. Peyton C, Sukal-Moulton T, Fowler E, **Sargent B**. Selective motor control of infants and children with cerebral palsy: innovations in assessment and intervention. Combined Sections Meeting, American Physical Therapy Association. February 13, 2020. Denver, CO.
15. **Sargent B**, Bompiani E, Kaplan S. Implement the 2018 congenital muscular torticollis clinical practice guideline! Combined Sections Meeting, American Physical Therapy Association. January 26, 2019. Washington DC.

16. Gillick B, Galloway C, Kolobe T, **Sargent B**. Advanced technology in early intervention: assessment and integration. American Academy of Cerebral Palsy and Developmental Medicine 72<sup>nd</sup> Annual Meeting. October 13, 2018. Cincinnati, Ohio.
17. **Sargent B**. Early diagnosis and intervention of infants at high risk for cerebral palsy. CAL-PT-FUND Research symposium: early interventions in pediatric physical therapy, California Physical Therapy Association, November 12, 2017. Los Angeles, CA.
18. **Sargent B**, Friel K, Gillick B, Gordon A. Advances in cerebral palsy: innovations in assessment and intervention across the lifespan. American Society of Neurorehabilitation Annual Meeting. November 10, 2017. Baltimore, MD.
19. Mendonca B\*, **Sargent B**. The cross-cultural validity of current standardized motor development assessments. Section on Pediatrics Annual Conference, 2016. November 11, 2016. Keystone, CO.
20. **Sargent B**, Duff, S. Optimizing therapeutic intervention for young infants. Combined Sections Meeting, APTA. February 7, 2015. Indianapolis, IN.
21. Lee A, **Sargent B**. Telehealth pediatric consultation: implications for connecting the classroom and the clinic. Educational Leadership Conference 2012, Education Section of the American Physical Therapy Association. October 6, 2012. Greenwich, CT.

#### **PRESENTATIONS (peer-reviewed platform and poster abstracts)**

1. Kong M\*, Mendonca B, Coombs A, Kysh L, **Sargent B**. Psychometric properties of the Alberta Infant Motor Scale and culturally-adapted versions: a systematic review. Poster Presentation. Combined Sections Meeting of the American Physical Therapy Association. February 17, 2024. Boston, MA. Abstract published in *Pediatr Phys Ther*. 2024;36(1):E.
2. **Sargent B**, Havens K, Kubo M, Wu T-W. Infants at high risk of spastic cerebral palsy demonstrate decreased selective leg joint control as early as 3 months of age. Platform Presentation. American Academy of Cerebral Palsy and Developmental Medicine 77th Annual Meeting. September 13, 2023. Chicago, IL. Abstract published in *Dev Med Child Neurol*. 2023;65(S3):64.
3. **Sargent B**, Almoadi N, Havens K, Kubo M, Wu T-W. Infants at high risk of cerebral palsy demonstrate more selective leg joint control during supported treadmill stepping, compared to spontaneous kicking. Poster Presentation. American Academy of Cerebral Palsy and Developmental Medicine 77th Annual Meeting. September 13, 2023. Chicago, IL. Abstract published in *Dev Med Child Neurol*. 2023;65(S3):146-147.
4. Staudt E, **Sargent B**, Fowler E. Mini-SCALE: Selective Control Assessment of the Lower Extremity in infants and young children: evidence of content and construct validity. Platform Presentation. American Academy of Cerebral Palsy and Developmental Medicine 77th Annual Meeting. September 13, 2023. Chicago, IL. Abstract published in *Dev Med Child Neurol*. 2023;65(S3):62.

5. Almoadi N\*, Havens K, Kubo M, Wu T-W, **Sargent B**. Supported treadmill stepping motivates selective motor control of infants at high risk of cerebral palsy. Poster Presentation. Combined Sections Meeting of the American Physical Therapy Association. February 24, 2023. San Diego, CA. Abstract published in *Pediatr Phys Ther*. 2023;35(1):E116.
6. **Sargent B**, Havens K, Kubo M, Wu T-W. Developmental trajectory of selective leg joint control of infants at high risk of cerebral palsy. Poster Presentation. Combined Sections Meeting of the American Physical Therapy Association. February 24, 2023. San Diego, CA. Abstract published in *Pediatr Phys Ther*. 2023;35(1):E150.
  - Outstanding Research Abstract Award, best pediatric poster abstract at the 2023 American Physical Therapy Association Combined Sections Meeting
7. Castilla A\*, Gonzalez M\*, Kysh L, **Sargent B**. Updating the physical therapy management of congenital muscular torticollis clinical practice guideline: a systematic review. Poster Presentation. Combined Sections Meeting of the American Physical Therapy Association. February 24, 2023. San Diego, CA. Abstract published in *Pediatr Phys Ther*. 2023;35(1):E123.
8. Rhee C, Butera C, **Sargent B**, ...Dusing S. Brain injury and problem solving skills in very preterm infants: a case series. Poster Presentation. 2022 Neuroscience, Society for Neuroscience Annual Meeting. November 16, 2022. San Diego, CA.
9. Butera C, ..., **Sargent B**, ..., Dusing S. Neuroplastic changes in response to therapy intervention for preterm infants in the first months of life: a pilot study. Platform Presentation. American Academy of Cerebral Palsy and Developmental Medicine 76th Annual Meeting. September 24, 2022. Las Vegas, NV. Abstract published in *Dev Med Child Neurol*. 2022;64(S4):56.
10. Staudt F, **Sargent B**, Fowler E. Mini-SCALE: Selective Control Assessment of the Lower Extremity in infants and young children: Evidence of construct validity. Poster Presentation. 2022 Early Cerebral Palsy Health Summit: Detection, Intervention, Implementation. August 13-14, 2022. Atlanta, Georgia.
11. Baker A\*, Niles N\*, Kysh L, **Sargent B**. Early intervention effect on children with cerebral palsy: systematic review and meta-analysis. Poster Presentation. Combined Sections Meeting of the American Physical Therapy Association. February 4, 2022. San Antonio, TX. Abstract published in *Pediatr Phys Ther*. 2022;34(1):E97-98.
12. Staudt L, **Sargent B**, Thompson R, Fowler E. Can we assess lower extremity selective motor control in infants and toddlers with or at risk for spastic cerebral palsy? Demonstration Poster. American Academy of Cerebral Palsy and Developmental Medicine 75<sup>th</sup> Annual Meeting. October 6, 2021. Virtual. Abstract published in *Dev Med Child Neurol*. 2021.
13. Baker A\*, Niles N\*, Kysh L, **Sargent B**. Effect of early motor intervention on motor function of children with or at high risk of cerebral palsy ages 0-3 years: a systematic review and meta-analysis. Poster Presentation. 2021 Early Cerebral Palsy E-Health Summit. August 13-14, 2021.

14. Januszyk D\*, Schafer E\*, Thompson H, **Sargent B**. The effect of exercise and motor interventions for adults with cerebral palsy: a systematic review. Poster Presentation. Combined Sections Meeting of the American Physical Therapy Association. February, 2021. Virtual.
15. Januszyk D\*, Schafer E\*, Thompson H, **Sargent B**. The effect of exercise and motor interventions on physical activity and motor outcomes for adults with cerebral palsy: a systematic review. Poster Presentation. Academy of Pediatric Physical Therapy Annual Conference. November 14, 2020. Omaha, NE. Abstract published in *Pediatr Phys Ther*. 2020;32(4):E95-96.
16. **Sargent B**, Havens KL, Kubo M, Wisnowski JL, Wu T, Fethers L. Increasing selective hip-knee control of infant at high risk for cerebral palsy: a feasibility study. Poster Presentation. E-Health Summit: Implementation of Early Detection and Intervention of Cerebral Palsy. August 8, 2020.
17. Deng W, Rosales MR, **Sargent B**, Pulido JC, Mataric MJ, Smith BA. Quantity and variability of infant leg movement during a socially assistive robot reinforced contingent learning paradigm. Poster Presentation. 2020 North American Society for the Psychology of Sport and Physical Activity Conference. June 2020. Vancouver, BC. Abstract published in *J Sport Exerc Psychol*. 2020;42:S15.
18. Duff S, Stevanovic M, Berggren J, **Sargent B**, Kimbel A, Rakovski C, Yaghmaei E, Pidcoe P, Leiby B, Seruya M, Wade E. Rewarding arm activity in infants at risk: feasibility of a home-based program. Poster Presentation. 2020 American Occupational Therapy Association Annual Conference & Expo. March 2020. Abstract published in *Am J Occup Ther*. 2020;74:Suppl 1.
19. Coombs A\*, **Sargent B**. Effects of exercise interventions on motor outcomes during and after treatment for children with acute lymphoblastic leukemia: a systematic review. Poster Presentation. Combined Sections Meeting of the American Physical Therapy Association. February 12, 2020. Denver, CO.
20. Kim JA\*, **Sargent B**, Fethers L. Infants born full-term and preterm adapt to new task demands. Poster Presentation. Combined Sections Meeting of the American Physical Therapy Association. February 12, 2020. Denver, CO. Abstract published in *Pediatr Phys Ther*. 2020;32(1):E38.
21. Coombs A\*, **Sargent B**. The effect of exercise and motor interventions for children and adolescents with acute lymphoblastic leukemia: a systematic review. Poster Presentation. Academy of Pediatric Physical Therapy Annual Conference. November 16, 2019. Anaheim, CA. Abstract published in *Pediatr Phys Ther*. 2019;31(4):E36.
22. Kim JA\*, **Sargent B**, Fethers L. Infants born full-term and preterm generate more selective hip-knee movement during a scaffolded learning task. Poster Presentation. Academy of Pediatric Physical Therapy Annual Conference. November 16, 2019. Anaheim, CA. Abstract published in *Pediatr Phys Ther*. 2019;31(4):E43-44.

23. Kim JA\*, **Sargent B**, Fetters L. Exploratory learning to encourage selective leg movement in infants born full-term and very preterm. Poster Presentation. American Academy of Cerebral Palsy and Developmental Medicine Conference. September 19, 2019. Anaheim, CA. Abstract published in *Dev Med Child Neurol*. 2019;61:TE-SP13.
24. Ruggeri A\*, Marrone A\*, **Sargent B**. The efficacy of motor intervention to improve motor skills of children with autism spectrum disorder: a systematic review. Poster Presentation. American Physical Therapy Association Combined Sections Meeting. January 25, 2019. Washington, DC. Abstract published in *Pediatr Phys Ther*. 2019;31(1): E62-63.
25. Kim JA\*, **Sargent B**, Fetters L. Using exploratory learning to encourage selective hip-knee movement in infants born full-term and preterm. Poster Presentation. American Physical Therapy Association Combined Sections Meeting. January 24, 2019. Washington, DC. Abstract published in *Pediatr Phys Ther*. 2019;31(1):E50-51.
26. Kim JA\*, **Sargent B**, Fetters L. Using exploratory learning to encourage selective hip-knee joint movement in infants born full-term and preterm. Poster Presentation. American Society for Neurorehabilitation Annual Meeting. November 2, 2018. San Diego, CA.
27. **Sargent B**, Havens K, Winstein C, Fetters L. Motivating selective motor control of infants at high risk for cerebral palsy: a feasibility study. Poster Presentation. American Academy of Cerebral Palsy and Developmental Medicine 72<sup>nd</sup> Annual Meeting. October 13, 2018. Cincinnati, Ohio. Abstract published in *Dev Med Child Neurol*. 2018;60:S3.
28. Kim JA\*, **Sargent B**, Fetters L. Infants learn and change movement! Platform Presentation. Movement and Cognition at Harvard Medical School. July 27, 2018. Boston, MA.
29. Kim JA\*, Shivakumar A, **Sargent B**, Fetters L. Infants learn and change movement! Poster Presentation. International Congress of Infant Studies. July 1, 2018. Philadelphia, PA.
30. Ruggeri A\*, Marrone A\*, Johnson R, **Sargent B**. Efficacy of motor interventions on gross motor outcomes in children with autism spectrum disorder: a systematic review. Poster Presentation. Making Lifelong Connections: Taking the Next Steps Conference. April 13, 2018. Tampa, FL.
31. **Sargent B**, Havens K, Marcione N, Winstein C, Fetters L. Increasing selective hip-knee control of infants at high risk for cerebral palsy: a feasibility study. Platform Presentation. Combined Sections Meeting. American Physical Therapy Association. February 22, 2018. New Orleans, LA. Abstract published in *Pediatr Phys Ther*. 2018;30(1):E5.
32. **Sargent B**, Havens K, Marcione N, Winstein C, Fetters L. Increasing selective hip-knee control of infants at high risk for cerebral palsy: a feasibility study. Poster Presentation. American Society of Neurorehabilitation Annual Meeting. Nov 10, 2017. Baltimore, MD.
33. **Sargent B**, Havens K, Marcione N, Winstein C, Fetters L. Increasing selective hip-knee control of infants at high risk for cerebral palsy: a feasibility study. Poster Presentation. Neuroscience 2017, Society for Neuroscience Annual Meeting. Nov 15, 2017. Washington, DC.

34. **Sargent B**, Schweighofer N, Kubo M, Fetters, L. Infant exploratory learning and leg joint coordination; influence of prematurity. Poster Presentation. IV Step 2016: Prevention, Prediction, Plasticity, and Participation. Pediatric and Neurology Sections of the American Physical Therapy Association. July 17, 2016. Columbus, Ohio.
35. **Sargent B**, Havens K, Winstein C, Fetters L, Peterson B, Lepore N. Increasing selective leg control of infants at high risk for cerebral palsy: a feasibility study. Poster Presentation. Translational Science 2016, Association for Clinical and Translational Science. April 14, 2016. Washington, DC.
36. **Sargent B**, Kubo M, Fetters L. Infant discovery-learning and lower extremity coordination: influence of prematurity. Platform Presentation. Combined Sections Meeting. American Physical Therapy Association. February 19, 2016. Anaheim, CA. Abstract published in *Pediatr Phys Ther*. 2016;28(1):E5-6
37. **Sargent B**, Schweighofer N, Fetters L. Infant exploratory learning and leg joint coordination: influence of prematurity. Platform Presentation. American Academy of Cerebral Palsy and Developmental Medicine 69<sup>th</sup> Annual Meeting. October 23, 2015. Austin, Texas. Abstract published in *Dev Med Child Neurol*. 2015;57:G1.
38. Duff S, **Sargent B**, Kutch J, Berggren J, Fetters L. Self-generated feedback to increase muscle activation in children. Poster Presentation. American Academy of Cerebral Palsy and Developmental Medicine 69<sup>th</sup> Annual Meeting. October 23, 2015. Austin, Texas. Abstract published in *Dev Med Child Neurol*. 2015;57:SP18.
39. Duff S, **Sargent B**, Kutch J, Berggren J, Fetters L. Increasing muscle activation in children after neurological injury with contingent reinforcement. Poster Presentation. Neuroscience 2015, Society for Neuroscience Annual Meeting. October 19, 2015. Chicago, Illinois.
40. Duff S, **Sargent B**, Kutch J, Berggren J, Fetters L. Self-generated feedback to increase muscle activation in children. Platform Presentation. American Society of Hand Therapists Annual Conference. October 9, 2015. Denver, Colorado.
41. Duff S, **Sargent B**, Kutch J, Berggren J, Fetters L. Self-generated feedback to increase muscle activation in infants and toddlers. Poster Presentation. Combined Sections Meeting, American Physical Therapy Association. February 7, 2015. Indianapolis, IN. Abstract published in *Pediatr Phys Ther*. 2015;27(1):E20.
42. **Sargent B**, Reimann H, Kubo M, Fetters, L. Hip and knee force generation during infant kicking: influence of prematurity. Poster Presentation. Combined Sections Meeting, American Physical Therapy Association. February 7, 2015. Indianapolis, IN. Abstract published in *Pediatr Phys Ther*. 2015;27(1):E52.
43. **Sargent B**, Fetters L, Schweighofer N. Infant exploratory learning: influence of prematurity. Platform Presentation. International Society for Developmental Psychobiology 47<sup>th</sup> Annual Meeting. November 13, 2014. Washington, DC. Abstract published in *Dev Psychobiol*, 2015;57:S29.



44. **Sargent B**, Scholz JP, Reimann H, Kubo M, Fetters L. Development of infant leg coordination: exploiting passive torques. Poster Presentation. Section on Pediatrics Annual Conference 2014. October 24, 2014. St. Louis, MO. Abstract published in *Pediatr Phys Ther*. 2014;26(4):482.
45. **Sargent B**, Fetters L, Schweighofer N. Learning strategies of young preterm and term infants. Poster Presentation. Annual Meeting, American Society of Neurorehabilitation. November 7, 2013. San Diego, CA.
46. **Sargent B**, Fetters L, Schweighofer N. Infant learning of task-specific action: influence of prematurity. Poster Presentation. Combined Sections Meeting, American Physical Therapy Association. January 23, 2013. San Diego, CA. Abstract published in: *Pediatr Phys Ther*. 2013;25(1):122.
47. **Sargent B**, Kim SS, Schweighofer N, Fetters L. The contribution of exploration to learning in young infants. Poster Presentation. Neuroscience 2012, Society for Neuroscience Annual Meeting. October 17, 2012. New Orleans, LA.
48. Nagel M, **Sargent B**, Baker D. Relations between gross motor, fine motor, and cognitive development among preterm infants. Poster Presentation. 10<sup>th</sup> National Conference on Child Health Psychology. April 2006. Florida.

#### **PRESENTATIONS (invited national / state / local)**

1. **Sargent B**. Cerebral palsy: physical therapy management throughout the lifespan. Webinar. Neuroconsortium consisting of Neurologic Physical Therapy Residency Programs. Summer/Fall 2018-present. Los Angeles, CA.
2. **Sargent B**. Cerebral palsy and autism spectrum disorders: physical therapy management throughout the lifespan. Webinar. Neuroconsortium consisting of Neurologic Physical Therapy Residency Programs. Fall 2015-2017. Los Angeles, CA.
3. **Sargent B**, Surfas S. Pediatrics Panel. Annual Interprofessional Health Symposium, University of Southern California. November 1, 2014. Los Angeles, CA.
4. **Sargent B**. Case study. Sykes Symposium on Pediatric Physical Therapy, Health, and Development. March 17, 2012. Los Angeles, CA.

#### **NEWS RELEASES**

1. *Pediatric Physical Therapy* Expert Interview on: Congenital Muscular Torticollis: Systematic Review to Inform Best Practice, 2023 ([click here](#))
2. Seeker: From rolling to walking – how babies learn to move. 2021 ([click here](#))
3. Gammon K. USC physical therapy researcher Barbara Sargent aims to detect cerebral palsy in infants earlier than ever before. 2019 ([click here](#))
4. Gammon K. Gaming system helps young babies kick their way to health. *Popular Science*. 2014. ([click here](#))

## IV. GRANTS

### CURRENTLY FUNDED GRANTS

- 1/01/24-05/1/24 University of Southern California Provost Research Fellowship.  
Scholar: Di, Xiaowei Marina (scholar)  
Role: Mentor
- 9/1/23-12/31/24 Tracking longitudinal progression of selective motor control from infancy through childhood in spastic cerebral palsy. American Academy for Cerebral Palsy and Developmental Medicine and Pedal with Pete Research Grant.  
\$25,000  
MPI: Peyton, C; Sukal-Moulton, T  
Role: Co-I  
The purpose of these cohort studies is to track the longitudinal progression of selective motor control from infancy through childhood in spastic cerebral palsy using standardized selective motor control assessments, i.e., the BabyOSCAR (Observational Selective Capacity Appraisal), the Selective Control Assessment of the Lower Extremity (SCALE), and the Test of Arm Selective Control (TASC).
- 1/1/23-12/31/24 Feasibility of an in-home standing and walking intervention for infants with and at high risk of cerebral palsy. California Physical Therapy Association CAL-PT-FUND Research Grant. Clinicaltrials.gov Identifier: NCT05781438.  
\$20,000  
PI: Sargent  
The purpose of this pilot clinical trial is to determine the feasibility and pilot efficacy of an early, intensive parent-led standing and walking intervention that uses an in-home body weight support for infants with cerebral palsy.
- 8/1/22-8/31/24 Building the Los Angeles Early Identification and Intervention for Infants at risk for cerebral palsy network: EI3 Network. Zumberge Research Coordination & Team Building award. \$25,000  
MPI: Yeh, A; Dusing, S.  
Role: Co-I  
The purpose of this award is to coordinate across several different state agencies to streamline referral patterns from the Neonatal Intensive Care Units to Early Intervention and High-Risk Infant Follow-Up programs in Los Angeles to improve access to early intervention, the early detection of cerebral palsy, and build infrastructure to support recruitment of infants at high risk of cerebral palsy into research studies.
- 2/1/22-4/31/24 Therapeutic intervention supporting development from the neonatal intensive care unit (NICU) to 6 months for infants post hypoxic ischemic encephalopathy. NIH National Pediatric Rehabilitation Resource Center (C-Progress; 5P2CHD101912-02; PI: Ramey, S). Subaward No: 412579-19758. ClinicalTrials.gov Identifier: NCT05130528. \$25,000  
MPI: Sargent, B; Dusing, S

The purpose of this pilot clinical trial is to evaluate the feasibility of a therapeutic intervention designed to support the development of infants with hypoxic ischemic encephalopathy from NICU to 6 months.

- 9/1/20-8/31/24 Identification and targeted intervention for selective motor control of the lower extremities in infants and toddlers. Cerebral Palsy Foundation Grant. \$30,000  
PI: Fowler, E  
Role: Consultant  
The purpose of this project is to develop the Selective Control Assessment of the Lower Extremities for children from 3 months to 4 years of age (Mini-SCALE) and to develop an early intervention to promote selective movement of the lower extremities.
- 5/1/20-4/30/25 Evaluation of the efficacy of a physical therapy intervention targeting sitting and reaching for young children with cerebral palsy. NIH, NICHD R01HD101900-01. ClinicalTrials.gov Identifier: NCT04230278. \$3,043,834  
PIs: Dusing S, Harbourne R.  
Role: Co-I  
The purpose of this multisite clinical trial is to evaluate the efficacy of a physical therapy intervention designed to advance sitting and reaching skills with the ultimate goal of improving cognitive skills of infants with cerebral palsy under 2 years of age.
- 3/1/20-9/30/24 Corbett Ryan-Northwestern-Shirley Ryan AbilityLab-Lurie Children's Infant Early Detection, Intervention and Prevention Project: Sensor validation and machine learning algorithm. Patrick G. and Shirley W. Ryan Foundation. \$141,100  
PI: Leiber, R  
Role: PI for USC site  
The purpose of this project is sensor validation and the development of a machine learning algorithm to detect atypical leg movements in early infancy that predict later motor/developmental delay.

## COMPLETED FUNDING

### Research Grants

- 1/1/21-6/30/23 Development of a Research Consortium and Planning a Proposal to evaluate the Efficacy of STEPS\_H2 – Supporting Transitions by Enhancing Parent Support from Hospital to Home. APTA Academy of Pediatric Physical Therapy Planning Grant. \$36,000  
PI: Dusing, S  
Role: Co-I  
The focus of this planning grant is to establish an interdisciplinary consortium and plan a clinical trial investigating the effects of a well-defined intervention to provide developmental support in the Neonatal Intensive Care Unit and during the transition to home.
- 1/1/19-12/31/23 Quantifying selective motor control in infants at high risk for cerebral palsy. Foundation for Physical Therapy Pediatric Research Grant. \$40,000  
Role: PI  
The purpose of this cohort study is to characterize the developmental trajectory of selective leg joint control of infants at high risk for cerebral palsy and to determine if active engagement in specific functional tasks (foot reaching, treadmill stepping) increases selective hip-knee control.
- 12/1/18-11/30/22 Understanding selective motor control of infants at high risk for cerebral palsy. APTA Academy of Pediatric Physical Therapy Grant. Grant # 2018\_RG01. \$29,831  
Role: PI  
The purpose of this study is to characterize the developmental trajectory of selective leg joint control of infants at high risk for cerebral palsy and to determine if active engagement in specific functional tasks (foot reaching, taking steps on treadmill) increases selective hip-knee control.
- 10/1/17- 5/31/22 Home-based biofeedback to augment recovery after perinatal brachial plexus injury. American Foundation for Surgery of the Hand Grant.  
PI: Duff S  
Role: Consultant  
The purpose of this clinical trial is to test the feasibility of a parent-led 2-week home-based biofeedback intervention for infants with perinatal brachial plexus injury.
- 1/1/16-12/31/17 Effects of an in-home motor learning program on the leg coordination of infants at high risk for cerebral palsy. American Physical Therapy Association Section on Pediatrics Grant Award. Grant #2015\_2RG02. \$30,000  
Role: PI  
The purpose of this cohort study is to determine if infants at high risk for cerebral palsy will generate more mature leg coordination patterns when

participating in an in-home motor learning intervention 8 minutes/day, 5 days/week for 6 weeks.

- 7/1/14-6/30/15 Development and validity of an in-home Infant Kicking Activated Mobile. Zumberge Fund Individual Grant Program, USC Office of the Provost. \$24,999.  
Role: PI  
The purpose of this project is to further develop and validate the in-home Kicking Activated Mobile (iKAM) system, including validation of the hip-knee coordination patterns obtained from the in-home iKAM using Microsoft Kinect with the lab-based iKAM using the Optotrak Motion Capture system, and assess the feasibility of the iKAM system for the home setting.
- 3/15/14-06/30/15 Development and validity of an in-home Infant Kicking Activated Mobile. Southern California Clinical and Translational Science Institute (SC CTSI) Research Grant. NIH, NCATS UL1TR001855/UL1TR000130. \$30,000.  
Role: PI  
The purpose of this project is to develop an in-home infant Kicking Activated Mobile (iKAM) system which both activates an infant mobile based on an infant's leg actions and captures the leg movements so that the infant's leg coordination patterns can be analyzed to determine if there has been a change in leg coordination when interacting with the mobile.
- 12/1/13-11/31/14 Augmenting muscle activation and function following perinatal brachial plexus injury. American Physical Therapy Association Section on Pediatrics Grant Award. \$24,000  
PI: Duff S  
Role: Co-I  
The purpose of this cohort study is to examine whether infants with brachial plexus injury can learn the contingency between visual-auditory feedback and biceps muscle activation, as measured with surface electromyography.

### **Training Grants**

- 9/1/16-8/31/21 Rehabilitation Research Career Development Program, National Center for Medical Rehabilitation Research (NICHD), NIH. Grant# K12 HD055929  
PI: Ottenbacher  
Role: Scholar  
The purpose of the training is to become a leading independent clinical investigator in the study of rehabilitation interventions to optimize functional outcomes of infants and children with movement dysfunction.

7/1/15-06/30/16    Mentored Career Development in Clinical and Translational Science Program (SC CTSI). NIH, NCATS UL1TR001855/UL1TR000130.  
Role: Scholar  
The purpose of the training is to become a leading independent clinical investigator in the study of rehabilitation interventions to optimize functional outcomes of infants and children with movement dysfunction.

### **Mentored Grants**

5/16/23-8/19/23    University of Southern California Provost Research Fellowship.  
Scholar: Di, Xiaowei Marina (scholar)  
Role: Mentor

5/16/22-8/19/22    University of Southern California Provost Research Fellowship.  
Scholar: Knight, Aislinn (scholar)  
Role: Mentor

5/16/22-8/19/22    University of Southern California Provost Research Fellowship.  
Scholar: Wedekind, Katherine (scholar)  
Role: Mentor

9/13/21-12/3/21    University of Southern California Provost Research Fellowship.  
Scholar: Lin, Naomi (scholar)  
Role: Mentor

5/17/21-8/13/21    University of Southern California Provost Research Fellowship.  
Scholar: Lin, Naomi (scholar)  
Role: Mentor

12/1/18-11/30/20    Using exploratory learning to encourage selective hip-knee movement in infants born full-term and very preterm. APTA Academy of Pediatric Physical Therapy Grant. Grant # 2018\_MG01. \$10,000.  
PI: Kim J  
Role: Mentor  
The purpose of this cohort study is to determine if infants born very preterm exhibit more selective hip-knee movement when participating in a Scaffolded Mobile Task.

9/14/18-11/30/18    University of Southern California Provost Research Fellowship.  
Scholar: Limlingan J (scholar)  
Role: Mentor

5/17/18-08/1/18    University of Southern California Provost Research Fellowship.  
Scholar: Limlingan J (scholar)  
Role: Mentor

## V. TEACHING ACTIVITIES

### **USC UNIVERSITY CENTER FOR EXCELLENCE IN DEVELOPMENTAL DISABILITIES, CHILDREN'S HOSPITAL LOS ANGELES**

Discipline Director: California Interdisciplinary Leadership Education in Neurodevelopmental and Related Disabilities (CA-LEND) Training Program.

Leadership Project Mentor (150 hours), 2014-present  
Interdisciplinary Teams (14 hours), 2014-2016  
Scenario-Based Learning (24 hours), 2013-2016

### **UNIVERSITY OF SOUTHERN CALIFORNIA, INTERPROFESSIONAL EDUCATION**

Mentor: Interprofessional Education Day (4 hours). USC Interprofessional Education Collaborative. 2014.

### **UNIVERSITY OF SOUTHERN CALIFORNIA / CHILDREN'S HOSPITAL OF LOS ANGELES, PEDIATRIC RESIDENCY PROGRAM**

Co-Director: Normal Development Module (10 contact hours), 2014-2020  
Tests and Measures Module (12 contact hours), 2017-present  
Evidence Based Practice Module (150 contact hours), 2014-present

### **UNIVERSITY OF SOUTHERN CALIFORNIA, NEURO RESIDENCY PROGRAM**

Typical and atypical development, management of cerebral palsy and autism spectrum disorder across the lifespan, spasticity management, management of developmental coordination disorder, community resources (6 contact hours), 2014-2017

### **UNIVERSITY OF SOUTHERN CALIFORNIA, DIVISION OF BIOKINESIOLOGY AND PHYSICAL THERAPY** (100 students in residential pathway, 50 students in hybrid pathway)

#### Course Director in Doctor of Physical Therapy (DPT) Program

PT 529 Lifespan Motor Control (2 units), 2018-2019 (residential), 2020-present (residential, hybrid)

PT 529 Lifespan Motor Control (3 units), 2014-2017 (residential)

#### Instructor in DPT Program

PT 561c Evidence for Physical Therapist Practice (2 contact hours, 2020 (residential, 2 sections)

#### Course Contributor in Biokinesiology (BKN) Program

BKN 550 Neurobehavioral Basis of Movement (4 contact hours: synaptic plasticity, the developing nervous system), 2021-present

BKN 599 Special Topics: Developmental Neurobiology and Implications of Brain Injury (7 contact hours: the developing nervous system; quantification of brain injury in infancy using MRI, DTI, CT scan; implications of rehabilitation research and clinical practice from mechanistic studies), 2023-present

Course Contributor in DPT Program

PT 521L Basics of Patient Management (3 contact hours: ROM/MMT lab), 2013-2014, 2017-2019 (residential)

PT 530a Therapeutic exercise (10.5 contact hours: lifespan exercise and balance considerations, Playground Pals), 2014-2015 (residential)

PT 536 Pathology of Cardiopulmonary Disease and General Medical Conditions (3 contact hours: cystic fibrosis), 2019-present (residential, hybrid)

PT 546 Neuropathology (4 contact hours: cerebral palsy, autism spectrum disorder), 2014-2018 (residential), 2020 (hybrid), 2021-present (residential, hybrid)

PT 549L Clinical Exercise Physiology (3-16 contact hours: Fitness testing), 2013-2014, 2017-2019 (residential)

PT 561d Evidence for Physical Therapist Practice (2 contact hours: family-centered care), 2012-2013 (residential)

PT 561d Evidence for Physical Therapist Practice (2-3 contact hours: interprofessional education), 2020-present (residential, hybrid)

PT 561e Evidence for Physical Therapist Practice (5 contact hours: virtual interprofessional education), 2022-present (residential, hybrid)

PT 561e Evidence for Physical Therapist Practice (2 contact hours: pediatric funding), 2013-2016 (residential)

PT 571L Clinical Management of Cardio-Pulmonary Dysfunction (4 contact hours: leukemia case), 2013 & 2017 (residential), 2019-2023 (residential, hybrid)

PT 571L Clinical Management of Cardio-Pulmonary Dysfunction (4 contact hours: cystic fibrosis case), 2019-2023 (residential, hybrid)

PT 581L Clinical Management of the Patient with Neurological Dysfunction (8 contact hours: movement analysis lab [2], motor learning lab [2], cerebral palsy case and lab [4]), 2014-2015 (residential)

PT 582 Mechanics of Human Gait (1-3 contact hour: lifespan gait lecture and lab), 2013-2014, 2016, 2018-2019, 2023 (residential)

PT 621L Clinical Management of the Patient with Orthopedic Disorders (2 contact hours: congenital muscular torticollis lecture and lab), 2014-2015, 2017-2018 (residential), 2019-present (residential, hybrid)



PT 621L	Clinical Management of the Patient with Orthopedic Disorders (3 contact hours: adolescent idiopathic scoliosis and Scheuermann's kyphosis lecture and lab), 2017 (residential)
PT 630	Integrated Management of Clinical Skills (3 contact hours each semester: congenital muscular torticollis lab), 2013-2020 (residential)
PT 632	Integrated Management of Clinical Skills Seminar (4 contact hours each semester: congenital muscular torticollis case), 2013-2016, 2018-2019 (residential), 2020-present (residential, hybrid)
PT 632	Integrated Management of Clinical Skills Seminar (4 contact hours each semester: lifespan knee or myelodysplasia or cerebral palsy case), 2013-2016, 2018-2019 (residential)
PT 650	Differential Diagnosis (4.5 contact hours: congenital hydrocephalus case), 2013-2019 (residential), 2020-present (residential, hybrid)

Instructor for Independent Research and Independent Study

BKN 559	Readings in Biokinesiology (1-4 units), 2016, 2019-present
BKN 590	Directed Research (1-2 units), 2016-2017, 2021-present
BKN 790	Research (1-2 units), 2017-2019
BKN 794	Dissertation (2 units), 2018-2020
BME 490	Directed Research, Biomechanical Engineering (3 units), 2018
HP 490x	Independent Research, Health Promotion and Global Health (2 units), 2019-2020
MEDS 490	Directed Biomedical Research (2-4 units), 2020, 2023

Teaching Assistant

PT 561b	Evidence for Physical Therapist Practice (2 units), 2010-2013
PT 561c	Evidence for Physical Therapist Practice (2 units), 2010-2012
PT 529	Lifespan Motor Control (2 units), 2009
PT 581L	Clinical Management of the Neurologically Involved Patient (5 units), 2009
PT 521L	Principles of Patient Management (5 units), 2008

**MOUNT ST. MARY'S COLLEGE, DPT PROGRAM**

Course Director or Co-Director

PT 441	Integrative Seminar I: Motor Learning and Motor Control (1 unit), 2012
PT 442	Integrative Seminar II: Plasticity of the Neuromuscular System (1 unit), 2013
PT 444	Integrative Seminar III: Medical Science Lifespan Issues (1 unit), 2009-2012
PT 445	Integrative Seminar IV: Adolescent Orthopedics (1 unit), 2005, 2007
PT 461	Physical Therapist as Educator (1 unit), 2013
PT 475	Patient/Client Management: Pediatrics (2 units), 2000-2013
PT 492	Research III: Evidence Based Practice (1 unit), 2013
PT 495B	Research VI: Research Development II (1 unit), 2013
PT 495C	Research VII: Capstone Project (1 unit), 2013

Course Contributor

PT 472B      Patient/Client Management: Neuromuscular II (12 contact hours), 2009-2013

**RESEARCH MENTORING – USC BKN GRADUATE**

2023-present    Ai-Tzu (Ellie) Chan (Ph.D. Advisor). Division of Biokinesiology and Physical Therapy, USC.

2021-present    Nora Almoadi (Ph.D. Advisor). Locomotor exploratory behaviors of infants born preterm and full-term. Division of Biokinesiology and Physical Therapy, USC.

2021-present    Arya Salgaonkar (Ph.D. Committee Member). Division of Biokinesiology and Physical Therapy, USC.

2018-2022      Weiyang (Wayne) Deng (Ph.D. Committee Member). Learning acceleration control of leg movements during infancy. Division of Biokinesiology and Physical Therapy, USC.

2015-2020      Jeongah (Jane) Kim, PhD, PT (Ph.D. Advisor). Understanding how infants born full-term and preterm learn, move, and explore. Division of Biokinesiology and Physical Therapy, USC.

**RESEARCH MENTORING – USC DOCTOR OF PHYSICAL THERAPY**

2022-2023      Sabrina Beidoun, Minhsang Dinh, Karina Rodriquez

2021-2022      Emily Morgan-Arnold, Savanna Duenas, Kira Conde

2020-2021      Nahielly Torres, Madison Davis

2018-2019      Aubrey Baker, Nicole Crisan, Alisa Kokanoutranon, Jamie Proffitt, Emily Puzo, Vivian Pae

2017-2018      Jessica Nguyen, Jessica Maggie Ridenhour

2015-2016      Kelly Young

2014-2015      Kelly Young, Christina Diggs

**RESEARCH MENTORING – UNDERGRADUATE**

2023            Eesha Singh, USC Human Biology, minor in Health Care Studies.

2023            Hayes Waycaster, USC Biomedical Engineering.

2022-present    Marina Di. USC Human Biology. Includes MEDS 490 Directed Research for 1 semester and USC Provost Research Fellowship for 2 semesters.

2022-2023      Amelia Goudzwaard, USC Human Biology, Minor in Health Care Studies and Environmental Health.

2022-present    Isabella Leung, USC Health and Human Sciences.

2022-2023      Aislinn Knight, USC Human Biology, Minor in Dance. Includes USC Provost Research Fellowship and Bridge UnderGraduate Science (BUGS) Summer Research Program for 1 semester.

2021-2023	Katherine Wedekind, USC Health and Human Science. Includes USC Provost Research Fellowship for 1 semester.
2020-2022	Naomi Lin. USC Human Biology, Minor in Health Care Studies. Includes MEDS 490 Directed Biomedical Research for 1 semester and USC Provost Research Fellowship for 2 semesters.
2019-2021	Caroline Peh. USC Health Promotion and Disease Prevention. Includes HP 490x Directed Research Health Promotion and Global Health for 2 semesters.
2019-2020	Andres Caballero. USC Health and Human Sciences.
2018-2019	Joshua Limlingan. USC Human Biology (prePT). Includes USC Provost Research Fellowship for 2 semesters and Bridge UnderGraduate Science (BUGS) Summer Research Program for 1 semester.
2017-2019	Manjima Sarkar. USC Biomedical Engineering/Neuroscience. Includes BME 490 Directed Research Biomechanical Engineering for 1 semester.
2017-2019	Sophia Zhou. USC Biological Sciences (premed)
2015-2016	Jessica Maggie Ridenhour. USC Human Biology (prePT).
2015	Juliana Couto, Vanessa Hennig, Nicolly Molina. Brazil Scientific Mobility Program. Summer research program sponsor.
2014	Ta'Shariah Robinson. Bridging the Gaps Summer Program, Keck School of Medicine, University of Southern California.
2014	Thais Helena Oliveira Bock. Brazil Scientific Mobility Program. Summer research program sponsor.
2011-2013	Shaveonte Graham. Genomic Research Experience for Undergraduate Research Program (GREU), University of Southern California.